

ARIZONA DEPARTMENT OF HEALTH SERVICES
BUREAU OF EMERGENCY MEDICAL SERVICES AND TRAUMA SYSTEM



COUNTY TRAUMA REPORTS:
GRAHAM COUNTY
ASTR 2012

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Data and Quality Assurance

Purpose:

The purpose of this report is to describe the incidence of trauma in your county using the Arizona State Trauma Registry (ASTR). This information can develop and strengthen injury prevention programs at the county level.

Methods:

In 2012, the Arizona State Trauma Registry (ASTR) received data from 31 state-designated trauma centers. Three additional healthcare institutions participated in the registry but were not designated. The Arizona trauma system had eight Level I trauma centers - six were located in the central county of Maricopa with 60 percent of the state's population; the remaining two Level I trauma centers were located in the northern-most county of Coconino and the southern county of Pima. For the 2012 reporting year, there were twenty designated Level IV and three Level III trauma centers dispersed primarily in the rural areas of the state. There are a total of 32,602 records in the ASTR for 2012.

Limitations:

Data is limited to participating hospitals in the state. Information on patients that were treated at out of state and non-participating hospitals will be missed. Injuries included in this registry are those which fit the ASTR inclusion criteria (Appendix 1). As such, injuries reported are reflective of severe injuries, and may not be a complete picture of injury in your county.

Geo-Population:

Arizona is 400 miles long and 310 miles wide for a total area of 114,006 square miles. The topography of the state is 364 square miles of water and a blend of deserts, mountains, and plateaus. Arizona shares contiguous borders with the states of California, Colorado, Nevada, New Mexico, and Utah. Internationally, the Mexican states of Sonora, Chihuahua, and Baja California Norte share a border with Arizona.

The total reported population in 2012 was 6,498,570; this was up from the 2011 reported number of 6,438,178 residents.¹ In 2012, 84.2 percent of the population lived in urban counties (Maricopa, Pima, Pinal, and Yuma). The remaining counties (Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Mohave, Navajo, Santa Cruz, and Yavapai) were home to 15.8 percent of the population.

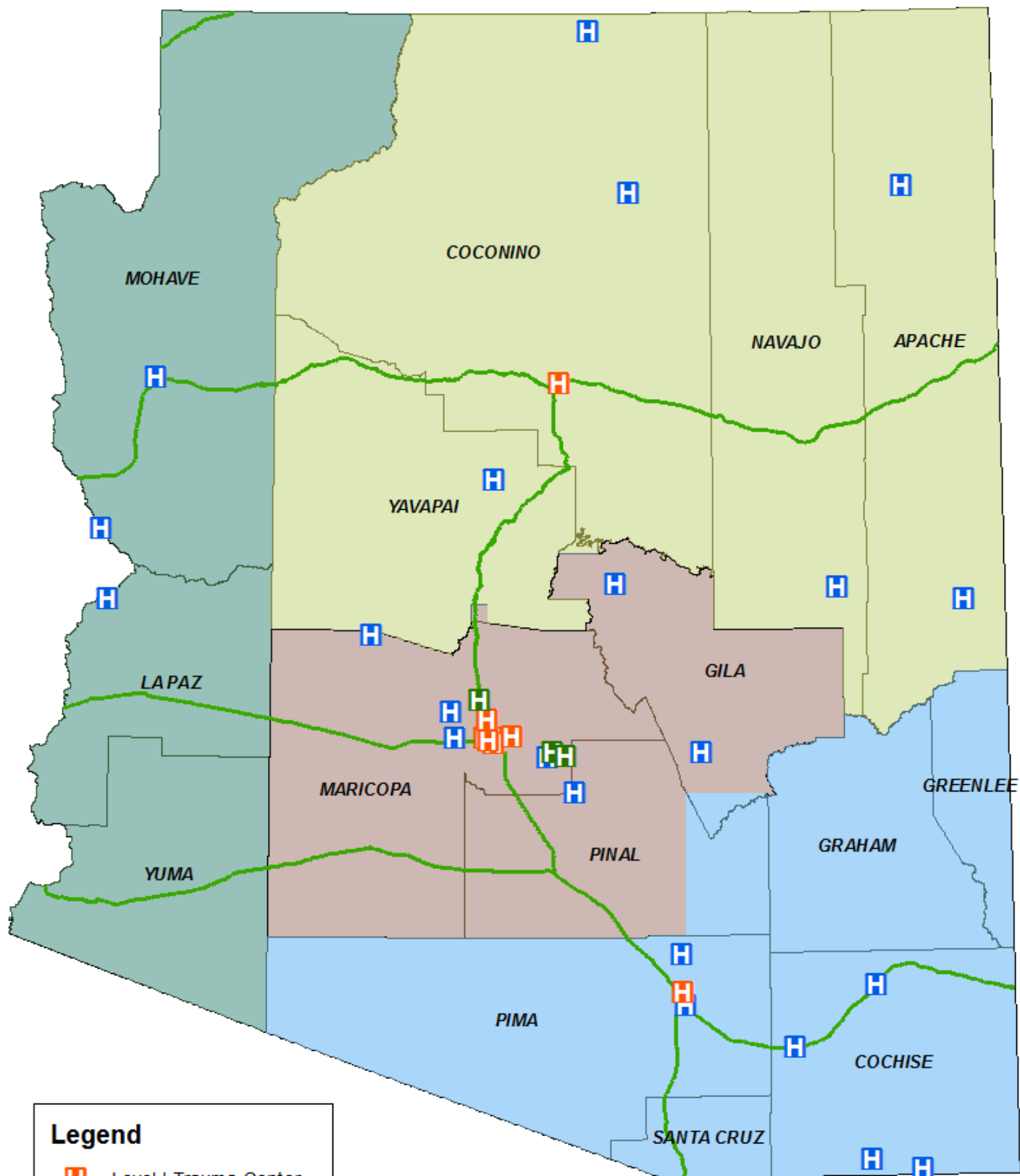
Additionally, Arizona has within its borders twenty-two (22) federally recognized American Indian tribes, comprising a 2012 collective population of 305,029.

¹ <http://www.azdhs.gov/plan/menu/info/pop/index.php?pg=2012>

Health Care Institution	Address	Effective Date	Expiration Date
Level I Trauma Centers			
Banner Good Samaritan Medical Center	925 E. McDowell Rd., Phoenix, AZ 85006	11/19/11	11/19/14
Dignity Health, dba Chandler Regional Medical Center (Provisional Designation)	1955 W. Frye Rd., Chandler, AZ 85224	3/24/14	9/24/15
Flagstaff Medical Center	1200 N. Beaver St., Flagstaff, AZ 86001	05/27/14	05/27/17
John C. Lincoln - North Mountain	250 E. Dunlap Ave., Phoenix, AZ 85020	04/24/14	04/24/15
Maricopa Medical Center	2601 E. Roosevelt, Phoenix, AZ 85008	12/20/11	12/20/14
Phoenix Children's Hospital	1919 E. Thomas Rd., Phoenix, AZ 85016	08/31/12	08/31/15
St. Joseph's Hospital & Medical Center	350 W. Thomas Rd., Phoenix, AZ 85013	11/20/13	11/20/16
Scottsdale Healthcare – Osborn	7400 E. Osborn, Scottsdale, AZ 85251	10/25/11	10/25/14
The University of Arizona Medical Center	1501 N. Campbell Ave., Tucson, AZ 85724	11/12/11	11/12/14
West Valley Hospital (Provisional Designation)	13677 W. McDowell Road, Goodyear, AZ 85395	7/21/14	1/21/16
Level III Trauma Centers			
Banner Baywood Medical Center	6644 E. Baywood Ave., Mesa, AZ 85206	05/12/14	02/25/15
John C. Lincoln Deer Valley Hospital	19829 N. 27 th Ave., Phoenix, AZ 85027	06/09/14	4/08/17
Mountain Vista Medical Center	1301 S. Crismon Rd., Mesa, AZ 85209	7/23/14	7/26/16
Level IV Trauma Centers			
Banner Boswell Medical Center	10401 W. Thunderbird Blvd., Sun City, AZ 85351	12/17/12	12/17/15
Banner Del E. Webb Medical Center	14502 W. Meeker Blvd, Sun City West, AZ 85375	01/09/14	01/09/17
Banner Estrella Medical Center	9201 W. Thomas Road, Phoenix, AZ 85037	08/30/12	08/30/15
Banner Gateway Medical Center	1900 N. Higley Road, Gilbert, AZ 85234	01/02/13	01/02/16
Banner Ironwood Medical Center	37000 N. Gantzel Rd., San Tan Valley, AZ 85140	10/11/12	10/11/15
Banner Page Hospital	501 N. Navajo, Page, AZ 86040	11/05/11	11/05/14
Benson Hospital	450 S. Ocotillo Ave., Benson, AZ 85602	03/03/14	03/03/17
Chinle Comprehensive Health Care Facility	P.O. Drawer PH, Chinle, AZ 86503	09/09/13	09/09/16
Cobre Valley Regional Medical Center	5880 S. Hospital Dr., Globe, AZ 85501	11/26/12	11/26/15
Copper Queen Community Hospital	101 Cole Ave., Bisbee, AZ 85603	12/01/12	12/01/15
Havasupai Regional Medical Center	101 Civic Center Ln., Lake Havasu City, AZ 86403	01/20/14	01/20/17
Kingman Regional Medical Center	3269 Stockton Hill Rd., Kingman, AZ 86409	10/15/12	10/15/15

Health Care Institution	Address	Effective Date	Expiration Date
La Paz Regional Hospital	1200 W. Mohave Rd., Parker, AZ 85344	06/02/12	06/02/15
Mt. Graham Regional Medical Center	1600 S. 20 th Ave., Safford, AZ 85546	03/20/14	03/20/17
Northern Cochise Community Hospital	901 W. Rex Allen Dr., Willcox, AZ 85643	12/04/11	12/04/14
Oro Valley Hospital	1551 East Tangerine Road, Oro Valley, AZ 85755	4/18/13	4/18/16
Payson Regional Medical Center	807 S. Ponderosa Street, Payson, AZ 85541	11/22/13	11/22/16
Summit Healthcare Regional Medical Cen-	2200 Show Low Lake Rd., Show Low, AZ 85901	08/12/14	08/12/17
The University of Arizona Medical Center	2800 E. Ajo Way, Tucson, AZ 85713	08/13/13	08/13/16
Tuba City Regional Health Care Corp.	P.O. Box 600, Tuba City, AZ 86045	05/06/12	05/06/15
Verde Valley Medical Center	269 S. Candy Ln., Cottonwood, AZ 86326	08/18/11	08/18/14
White Mountain Regional Medical Center	118 S. Mountain Ave., Springerville, AZ 85938	06/18/12	06/18/15
Wickenburg Community Hospital	520 Rose Ln., Wickenburg, AZ 85390	08/08/14	08/08/17
Yavapai Regional Medical Center – West Campus	1003 Willow Creek Road, Prescott, AZ 86301	01/10/14	01/10/17
Yavapai Regional Medical Center – East	7700 E. Florentine, Prescott Valley, AZ 86314	6/24/14	6/24/17

Updated as of October 1, 2014



Legend




-  Level I Trauma Center
-  Level III Trauma Center
-  Level IV Trauma Center

FIGURE 1: Graham County population by age, gender, and race/ethnicity, AZ Health & Vital Statistics

Group		Count	Percent
Age	<1	563	1.5%
	1-4	2,515	6.7%
	5-9	3,016	8.1%
	10-14	2,859	7.7%
	15-19	2,833	7.6%
	20-24	3,315	8.9%
	25-34	5,286	14.2%
	35-44	4,409	11.8%
	45-54	4,252	11.4%
	55-64	3,830	10.3%
	65-74	2,531	6.8%
	75-84	1,466	3.9%
	85+	439	1.2%
Gender	Female	17,563	47.1%
	Male	19,750	52.9%
Race/Ethnicity	Hispanic	10,979	29.4%
	White	19,925	53.4%
	American Indian/Alaska Native	5,541	14.9%
	Black/African American	624	1.7%
	Asian or Pacific Islander	243	0.7%
Total		37,313	100.0%

FIGURE 2: Trauma frequency and rate per 100,000 by county

County of Injury	Total Population	Percent of Population	Trauma Count	Percent of All Traumas	Trauma Rate per 100,000
Apache	72,310	1.1%	742	2.3%	1,026
Cochise	130,753	2.0%	1,127	3.5%	862
Coconino	134,313	2.1%	1,853	5.7%	1,380
Gila	53,627	0.8%	551	1.7%	1,027
Graham	37,313	0.6%	119	0.4%	319
Greenlee	8,599	0.1%	41	0.1%	477
La Paz	20,902	0.3%	156	0.5%	746
Maricopa	3,884,706	59.8%	14,873	45.6%	383
Mohave	203,072	3.1%	970	3.0%	478
Navajo	107,922	1.7%	873	2.7%	809
Pima	990,380	15.2%	4,925	15.1%	497
Pinal	389,192	6.0%	1,738	5.3%	447
Santa Cruz	48,725	0.7%	180	0.6%	369
Yavapai	211,582	3.3%	1,037	3.2%	490
Yuma	205,174	3.2%	2,062	6.3%	1,005
Other	-	-	552	1.7%	-
Total	6,498,570	100%	32,602	97.5%	502
Missing = 803					

Statewide, there were 32,602 traumatic injuries seen at state designated trauma centers– a rate of 502 per 100,000 Arizona residents.

Graham County makes up about 0.6 percent of the total population of Arizona. Injuries occurring in the county make up about 0.4 percent of the trauma cases from state designated trauma centers. The county-specific trauma rate, 319 per 100,000 county residents, is lower than the state average (Figure 3).

FIGURE 3: County-specific trauma rates per 100,000 residents

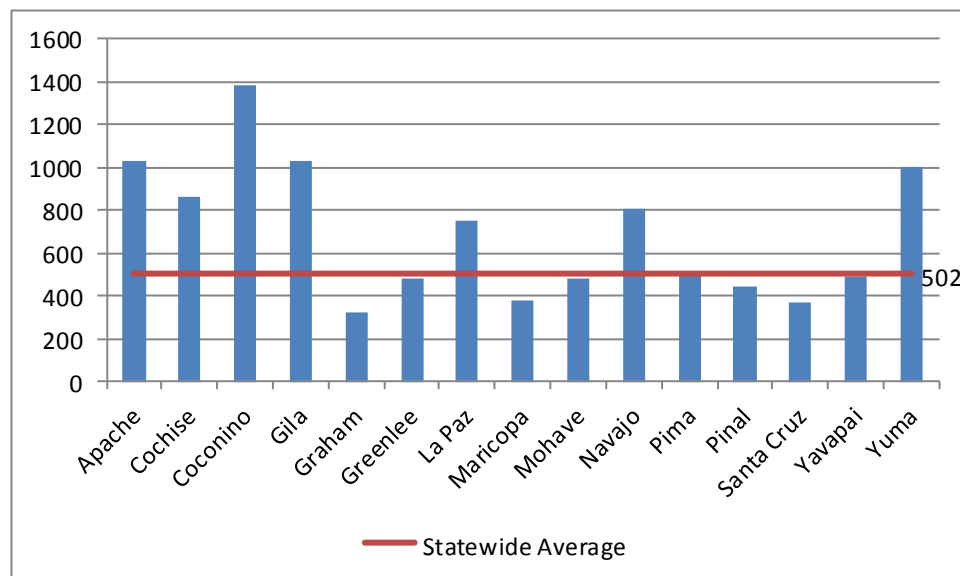


FIGURE 4: Frequency and rate of trauma by age, race/ethnicity, and gender in Graham County

Group		Population	Percent	Rate per 100,000
Age	<=14	15	12.6%	168
	>14	104	87.4%	367
Gender	Female	43	36.1%	245
	Male	76	63.9%	385
Race/Ethnicity	White	52	43.7%	261
	American Indian/Alaska Native	32	26.9%	577
	Other	31	26.1%	262
Total		119	100%	319

Due to the low trauma frequencies in some age groups, categories have been combined for analysis.

The trauma rate is lower in Graham County for all age groups (Figure 4), as compared to the rest of the state. Pediatrics < = 14 years of age have a lower trauma rate than people > 14 years of age (Figure 5).

FIGURE 5: Trauma rate per 100,000 residents by age

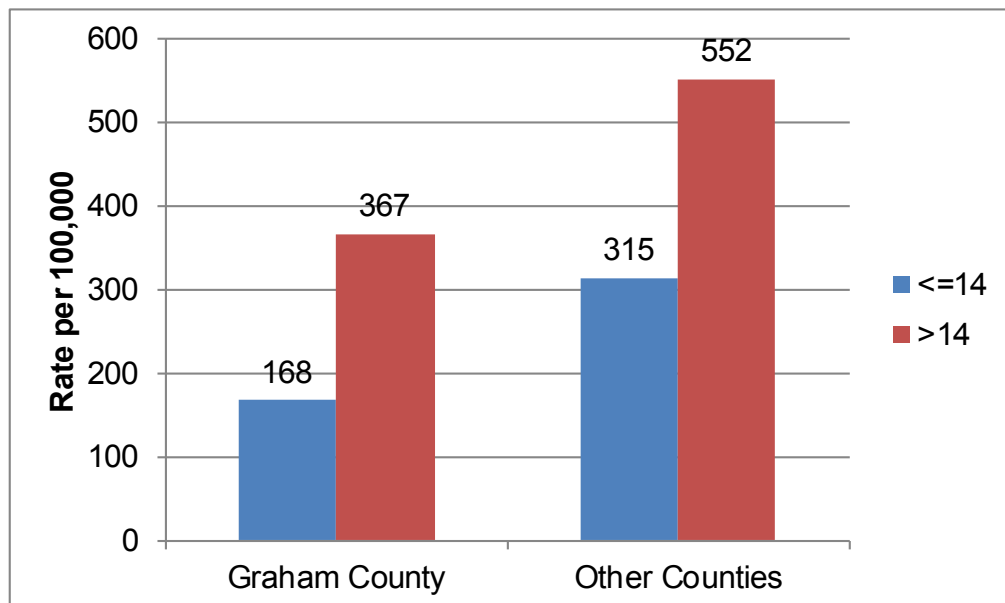
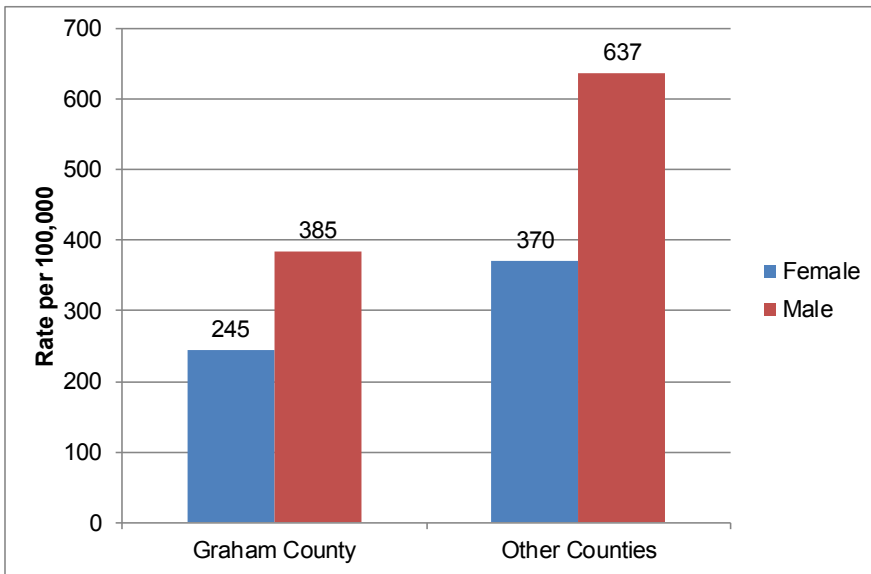


FIGURE 6: Trauma rate per 100,000 residents by gender



Both males and females in Graham County have lower trauma rates than their counterparts in other counties (Figure 6).

Due to the low trauma frequencies in some race/ethnicities, those categories have been combined for analysis.

The trauma rate for all race/ethnicities is lower in Graham County than in other counties (Figure 7).

FIGURE 7: Trauma rate per 100,000 residents by race/ethnicity

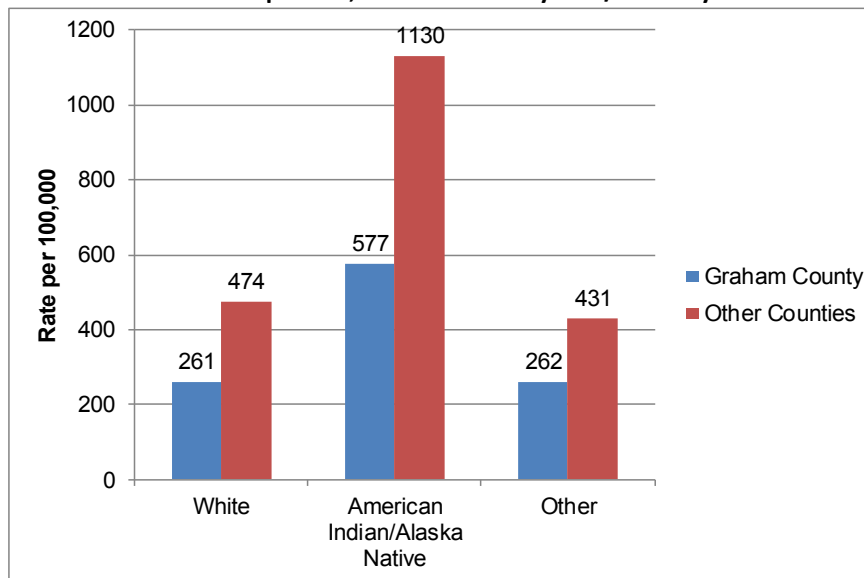


Figure 9 shows the top causes of traumatic injury in Graham County, as compared with other counties (rates per 100,000).

FIGURE 8: Frequency of top causes of trauma in Graham County

Cause	Count	Percent
Motor Vehicle Traffic	29	24.4%
Falls	26	21.8%
Struck by/Against	23	19.3%
Transport, other	10	8.4%
Cut/Pierce	10	8.4%
Other Specified	8	6.7%

FIGURE 9: Top causes of trauma, rates per 100,000 residents

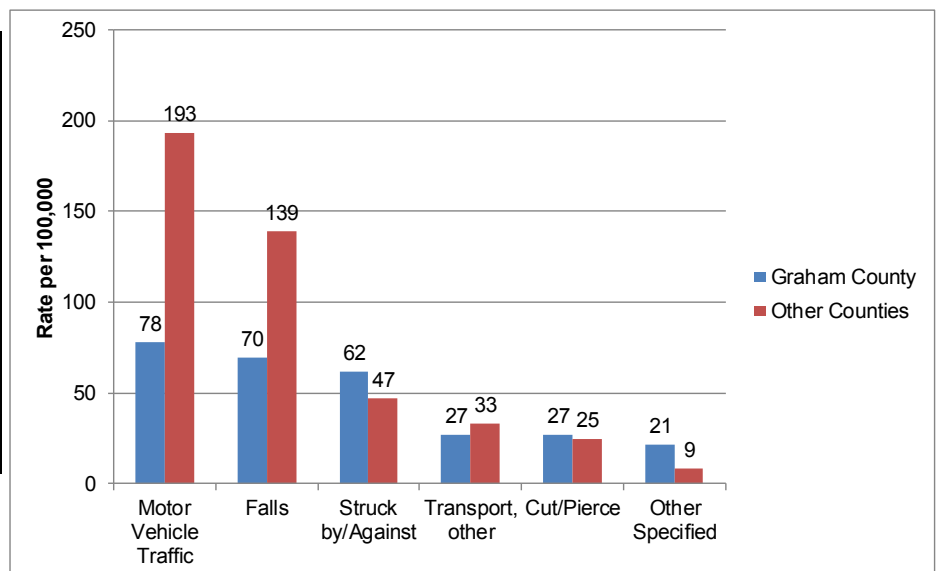
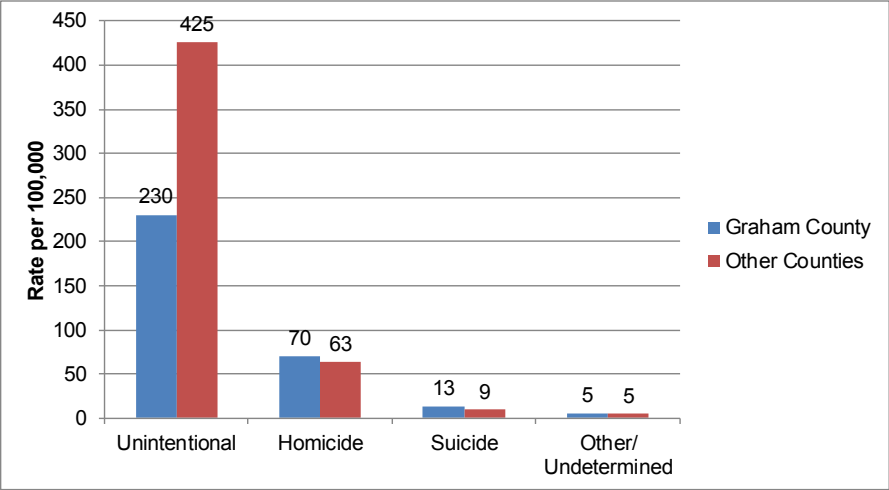


FIGURE 10: Intention of trauma, rate per 100,000 residents



The rate of homicide/assault trauma intent in Graham County is higher than in other Arizona counties (Figure 10).

Documented alcohol and drug use was present in 33.6% and 13.4% of traumatic injuries in Graham County, respectively (Figure 11).

Alcohol and drug use is defined as any indication of use through testing or self-report, regardless of level of impairment.

FIGURE 11: Substance use in traumatic injuries in Graham County

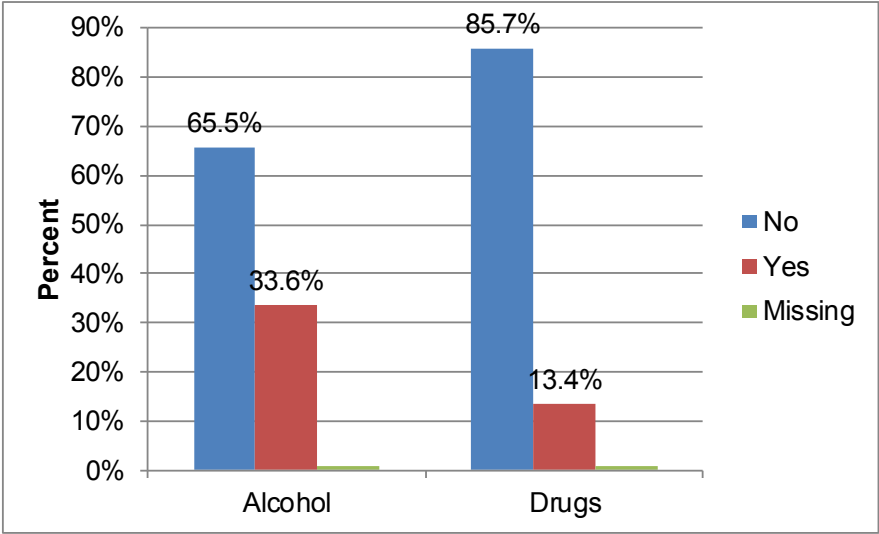


FIGURE 12: Frequency of substance use in traumatic injuries in Graham County

Substance Use		Frequency	Percent
Alcohol	No	78	65.5%
	Yes	40	33.6%
	Missing	1	0.8%
Alcohol	Total	119	100%
	No	102	85.7%
	Yes	16	13.4%
	Missing	1	0.8%
	Total	119	100%

FIGURE 13: Proportion of ground and air ambulance transports in Graham County

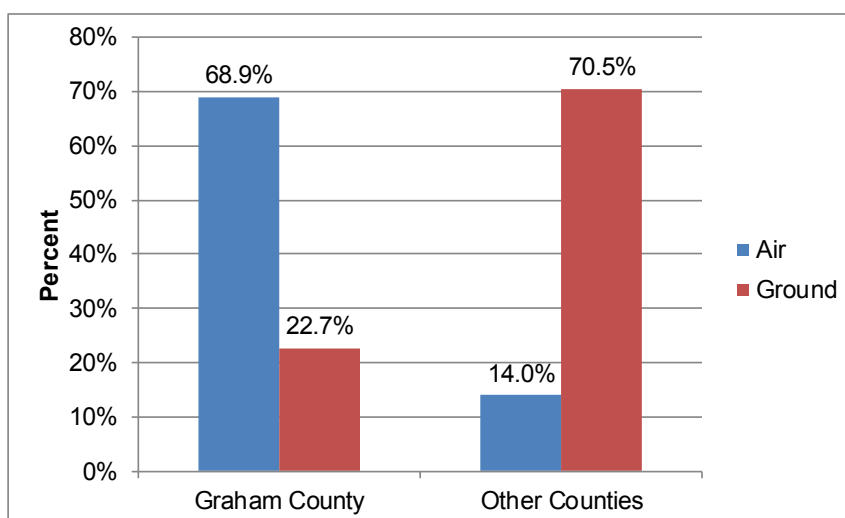


FIGURE 14: Count of ground and air ambulance transports

	Air	Ground	Other	Missing
Graham County	82	27	8	2
Other Counties	4542	22900	4935	106

FIGURE 15: Golden hour by transport type

The term “golden hour” refers to the hour immediately following traumatic injury. Theoretically, the chance of survival is highest when medical treatment to prevent irreversible internal damage is obtained within this time period.

Due to the large amount of missing data on golden hour, results on the proportion of patients arriving at the hospital within one hour are not conclusive.

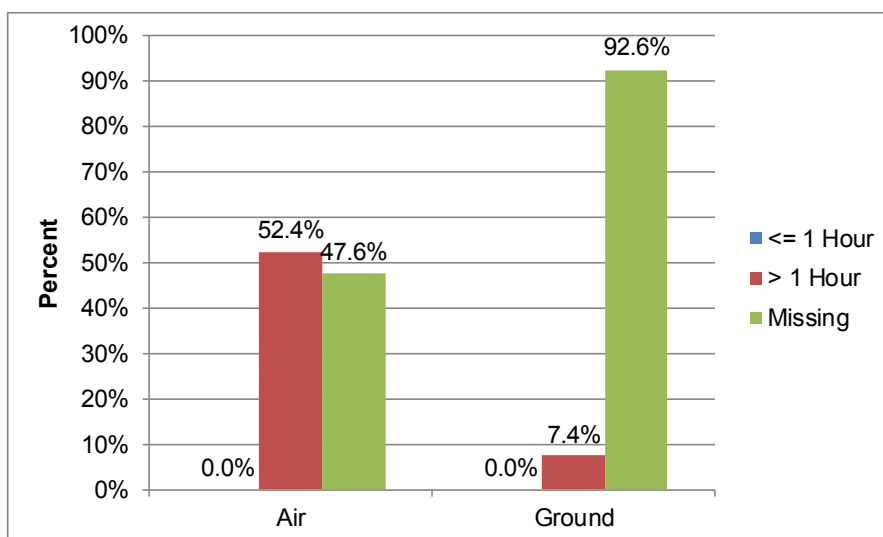


FIGURE 16: Count of golden hour by transport type to trauma center

Golden Hour	Air Ambulance		Ground Ambulance		Total	
	Count	Percent	Count	Percent	Count	Percent
<= 1 Hour	0	0.0%	0	0.0%	0	0.0%
> 1 Hour	44	52.4%	2	7.4%	46	41.4%
Missing	40	47.6%	25	92.6%	65	58.6%
Total	84	100%	27	100%	111	100%

FIGURE 17: Primary payer in Graham County

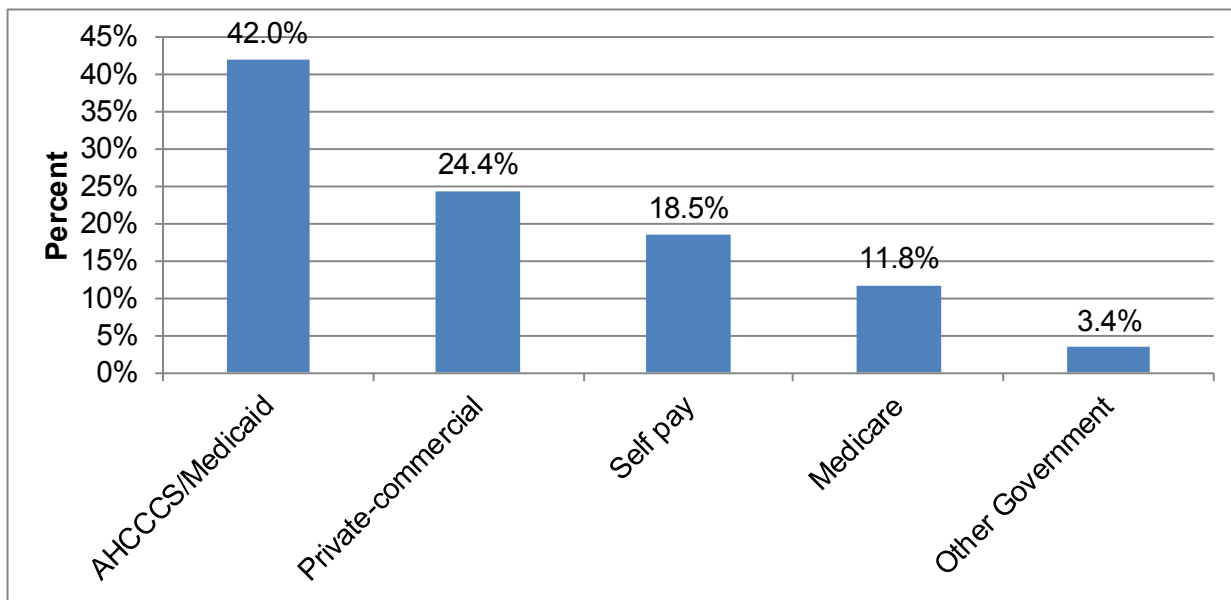


FIGURE 18: Count of primary payer in Graham County

Primary Payer	Frequency	Percent
AHCCCS/Medicaid	50	42.0%
Private-commercial	29	24.4%
Self pay	22	18.5%
Medicare	14	11.8%
Other Government	4	3.4%

AHCCCS/Medicaid is the primary payment source for trauma-related hospital visits in Graham County (Figures 17 & 18).

The median charge in Graham County in 2012 was \$28,933 (Figure 19).

FIGURE 19: Charges & reimbursement by primary payer in Graham County

Primary Payer	Total Charges	Median Charges	Total Reimbursement
AHCCCS/Medicaid	\$2,849,970	\$27,171	\$226,719
Private-commercial	\$1,071,132	\$27,389	\$326,184
Self pay	\$873,134	\$29,640	\$608
Medicare	\$1,439,674	\$52,230	\$266,994
Other Government	\$345,303	\$31,455	\$208,658
Total	\$6,579,214	\$28,933	\$1,029,163